

REVISION OF AUSTRALIAN LEPIDOPTERA.

By A. J. TURNER, M.D., F.E.S.

Under this heading I hope to publish a series of papers similar to the present, not taking the different families in any definite order, but as time and opportunity permit. In so doing I must necessarily be largely dependent for my material on others, and in the preparation of the present instalment I must acknowledge my indebtedness to Messrs. F. P. Dodd, of Townsville, R. Illidge and H. Tryon, of Brisbane, G. Lyell, of Gisborne, and O. Lower, of Adelaide, who have presented or lent me specimens for description.

FAM. NOTODONTIDÆ.

Head usually hairy. Tongue sometimes weak or absent. Maxillary palpi obsolete. Thorax hairy beneath. Femora hairy. Posterior tibiæ usually with two, sometimes with one, pair of spurs. Anterior tibiæ usually with a groove bare of scales on under surface. Forewings with vein 1*b* furcate at base, 1*c* absent, 5 from middle or above middle of cell, 7, 8, 9 stalked, 10 out of 8 + 9 or connected with 8 + 9 to form an areole, 11 free. Hindwings with two internal veins, 3 and 4 approximated at base, 5 usually imperfect from middle of cell, rarely absent, 6 and 7 usually stalked, 8 closely approximated to cell as far as middle, usually to near end of cell, sometimes connected with cell by a bar.

This is a very natural family. Superficially some of its members resemble the *Noctuidæ*, but there is not really any close relationship. The two families may always be distinguished by the origin of vein 5 of the forewings. On the other hand, the *Notodontidæ* are closely allied to the more primitive forms of the

Geometridæ belonging to the subfamilies *Monoctenianæ* and *Selidoseminæ* and to the *Eupterotidæ*. The characters usually given to separate it from these families are not wholly satisfactory, and the matter is one requiring further research. From the *Geometridæ* the *Notodontidæ* may usually be distinguished by the weakly-developed vein 5 of the hindwings in conjunction with the approximation of vein 8 of the hindwings nearly to the end of the cell, but this test is not an absolute one. In case of doubt the frequency with which vein 11 of the forewing is connected with veins 12 and 10 in the *Geometridæ* will probably prove valuable, as so far as I know these anastomoses do not occur in the *Notodontidæ*. For this reason I refer *Xylina serrata*, Wlk., (Brit. Mus. Cat. xi. p. 761) and *X. obscura*, Wlk., which in the British Museum Collection are placed as belonging to an undescribed genus of *Notodontidæ*, to the former family. The genus *Capusa*, Wlk. (Brit. Mus. Cat. xi. p. 626), has also been placed among the *Notodontidæ* in the British Museum Collection, but it differs from all members of the family, so far as I know, in vein 10 of forewings being free and not connected with 9. Mr. D. Goudie, of Birchip, Victoria, has bred the larvæ and states that they are geometriform. I think, therefore, that this genus also should be referred to the *Geometridæ*.

The *Eupterotidæ* are distinguished in Hampson's tabulation by the absence of the tongue, but this organ in the *Notodontidæ* is frequently very weak and sometimes appears to be absent. I cannot assert positively that this is actually so, as my material does not permit me to establish this point by dissection; but in any case the distinction appears unsatisfactory. Usually the divergence of vein 8 of hindwings from near base of cell in the *Eupterotidæ* is a satisfactory test, but it breaks down in the genus *Epicoma*, Hb., in which, however, as in other genera of that family, vein 10 of the forewings is wanting. It is, of course, evident that the investigation of family characters cannot be satisfactorily carried out on a local fauna.

The family, without being one of the largest, is yet of considerable extent, being especially well represented in South America,

and fairly so in North America, Europe and India. Sir George Hampson, in his 'Moths of India,' enumerates 113 species (excluding *Cyphanta*). In Australia it is but poorly represented, only some 30 species being at present known. This number is doubtless destined to be increased, as the moths are usually of very retired habits, and only readily obtained by rearing the larvæ; but the family will never be very prominent in our fauna.

The internal classification of the family is a matter of considerable difficulty owing to the variability of certain details of the venation. For instance, in a series of seven specimens of *Destolmia lineata*, Wlk., vein 6 of the forewings arises in four specimens from the areole, and in three specimens from the upper angle of the cell. In a series of eight specimens of the European *Phalera bucephala*, Linn., vein 10 of the forewings arises either from the areole,* or from 8 + 9 beyond the areole, and veins 3 and 4 of the hindwings may be either separate, connate, or stalked. Facts of this kind deprive the tabulation given in the 'Moths of India' (Vol. i., p. 124) of much of its value; and I have had in fact to create several new genera which may ultimately prove to be synonyms, when the Indian and Australian genera undergo systematic revision.

Among the Australian genera, *Hyleora*, *Neola*, *Sorama*, *Enosanda*, *Danima* and *Discophlebia* appear to be endemic. *Teleclita* (probably), *Spatalia*, *Cerura*, *Phalera* and *Gargetta* are found in India, some of them ranging also to Europe and even to America. Of *Pheressaces*, *Pheraspis*, *Themerastis*, *Gallaba*, *Osica* and *Cascera* it would be premature, in the present state of our knowledge, to make any statement.

* The areole may be, and is by different authors, regarded as being formed either by an independent bar developed between veins 10 and 8 + 9, or by vein 9 arising from 10 and anastomosing with 8. Which view may be correct is a nice morphological problem. This discrepancy is apt to cause confusion in the descriptions, and I think it is more convenient to write of the veins as arising from or beyond the areole, as the case may be. This can give rise to no misconception if it be borne in mind that, strictly speaking, the areole is formed by the connection of the proximal portions of the veins.

When the larval stages are better known (as, for instance, in North America as portrayed by Packard in the Memoirs of the National Academy of Sciences, Washington, 1895), they may be of help in elucidating the relationship of the genera. Larval characters are always to be viewed with caution, as they are so liable to adaptive modification, but in the present family they are more likely to be of use than elsewhere.

TABUEATION OF THE GENERA.

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| A. Forewings with no areole, vein 10 stalked with 8+9... | 5. <i>Teleclita</i> . |
| AA. Forewings with vein 10 connected with 8+9 to form an areole. | |
| B. Forewings with a well-marked dorsal tooth of scales..... | 4. <i>Spatalia</i> . |
| BB. Forewings without a dorsal tooth. | |
| C. Palpi short, porrect. | |
| D. Thorax with an anterior crest. | |
| E. Hindwings with vein 8 connected by a bar with cell..... | 3. <i>Sorama</i> . |
| EE. Hindwings with vein 8 approximated but not connected with cell. | |
| F. Crown of head crested, ♂ antennæ pectinated to apex. | |
| G. Forewings with vein 10 from 8+9 beyond areole..... | 1. <i>Hyleora</i> . |
| Forewings with vein 10 from areole. | 2. <i>Neola</i> . |
| FF. Crown of head not crested, ♂ antennæ with apical half simple. | 10. <i>Destolmia</i> , |
| DD. Thorax not crested, or with posterior crest only. | |
| E. Forewings with vein 6 from end of areole. | 6. <i>Cerura</i> . |
| EE. Forewings with vein 6 from before end of areole. | |
| F. Face with a rounded prominence..... | 8. <i>Enosanda</i> . |
| FF. Face without a rounded prominence. | |
| G. Antennæ with basal $\frac{3}{4}$ pectinated in both sexes, apices simple..... | 7. <i>Phressaces</i> . |
| GG. Antennæ of ♂ pectinated towards base only, of ♀ simple..... | 9. <i>Danima</i> . |
| GGG. Antennæ of ♂ pectinated to apex or nearly so. | |

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| H. Tongue weak or absent..... | 11. <i>Pheraspis</i> . |
| HH. Tongue well developed..... | 12. <i>Themerastis</i> . |
| GGGG. Antennæ of ♂ not pectinated. | |
| H. Palpi hairy..... | 13. <i>Phalera</i> . |
| HH. Palpi not hairy..... | 14. <i>Discophlebia</i> . |
| CC. Palpi long, second joint slightly ascending,
terminal joint porrect..... | 15. <i>Gallaba</i> . |
| CCC. Palpi long, recurved, terminal joint ascending. | |
| D. Thorax with an anterior crest..... | 16. <i>Ecnomodes</i> . |
| DD. Thorax not crested or with posterior crest
only. | |
| E. Forewings with areole broadly lozenge-
shaped..... | 17. <i>Gargetta</i> . |
| EE. Forewings with areole narrow. | |
| F. Forewings with veins 7 and 10 arising
from 8+9 beyond areole, which is
short..... | 18. <i>Osica</i> . |
| FF. Forewings with veins 7 and 10 arising
from areole, which is long..... | 19. <i>Cascera</i> . |

Gen. 1. HYLEORA.

[ὕληωρός, a forest-ranger.]

Hylæora, Dbld., P.Z.S. 1848, p. 117.

Head clothed with dense hairs, including a pair of long tufts from base of antennæ which form a crest on crown. Eyes naked. Tongue well developed. Palpi short, porrect, clothed with long dense hairs beneath; terminal joint short, abruptly truncate. Antennæ of ♂ pectinated to apex or nearly so. Thorax densely hairy above and beneath, with a high, erect, anterior crest, continuous with a lower, dense posterior crest. Abdomen hairy, with long hairs on mid-dorsum and at sides. Legs with femora densely hairy; posterior tibiæ with two pairs of spurs. Forewings with vein 2 from $\frac{4}{5}$, 3 from before angle, 5 from above middle of cell, 6 from upper angle of cell or from areole near base, 7 from areole, 10 from 8+9 beyond areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to near end of cell.

Type *H. eucalypti*, Dbld.

This and the following two genera are closely allied.

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| 1. Hindwings brownish or fuscous | 2. |
| Hindwings whitish | <i>dilucida</i> , |
| 2. Forewings with a very short, sharply defined basal longitudinal streak..... | <i>eucalypti</i> . |
| Forewings with a long median whitish suffused streak..... | <i>inclyta</i> . |

1. HYLEORA EUCALYPTI.

Hyleora eucalypti, Dbld., P.Z S. 1848, p. 117, pl. v.

Hyleora sphinx, Feld., Reise Nov. pl. xcvi. fig. 4.

♂♀. 90-112 mm. Closely allied to *H. inclyta*, Wlk., but anterior part of thorax irrorated with whitish; costal and dorsal portions of forewings irrorated with whitish, without suffused median longitudinal whitish band; a very short distinctly outlined white basal streak; a circular white mark on dorsal portion of base enclosing a dark fuscous centre, partly irrorated with white, and outlined externally with dark fuscous; the posterior dentate line outlined posteriorly by a whitish line; terminal portion of disc suffused with whitish; hindwings brownish, towards inner margin ochreous.

There has been some not unnatural confusion between this and the following species. I am indebted to Mr. J. A. Kershaw for the loan of specimens for examination. Though I consider them distinct, some corroborative evidence as to their larvæ and possible range of variation would be acceptable.

N.S.W.—Vic. Melbourne.

2. HYLEORA INCLYTA.

Sorana inclyta, Wlk., Trans. Ent. Soc. 1862, p. 79.

♂ ♀ 85-110 mm. Head, palpi, and thorax dark fuscous, mixed with whitish and ochreous. Antennæ whitish, pectinations pale ochreous, Abdomen deep ochreous, base of dorsum (sometimes), tuft, and lower surface dark fuscous. Legs dark fuscous mixed with whitish. Forewings elongate-triangular, costa nearly

straight in basal half, thence strongly arched, apex round-pointed, termen markedly oblique, scarcely rounded; dark fuscous, with sparsely scattered whitish scales; a broad white suffused streak from base above fold, containing a few black scales, narrowing to a point before middle; between this and dorsum is a dark grey suffusion; a short outwardly oblique blackish mark across centre of white streak, beneath which is an inwardly oblique streak towards dorsum; a fine oblique dark fuscous acutely dentate posterior line, edged with whitish posteriorly, more or less well marked, followed by a whitish suffusion which extends to apex: Hindwings with apex round-pointed, termen rounded; dark fuscous-brown, toward base suffused with ochreous; cilia dark fuscous-brown.

Type in Oxford Museum.

N.S.W.—Vic. Melbourne—Tas.—S.A.

3. HYLEORA DILUCIDA.

[Dilucidus, clear; in allusion to the hindwings.]

Hyleora dilucida, Feld., Reise Nov. pl. xevi., fig. 5.

♂ 72-84 mm. Head dark fuscous; face and palpi brown. Antennæ whitish-ochreous. Thorax dark fuscous with a few brown scales. Abdomen deep ochreous; tuft fuscous. Legs fuscous-brown. Forewings elongate, costa straight in basal $\frac{2}{3}$, strongly arched towards apex, apex rounded, termen straight, crenate, with strong projections on veins; dark fuscous, posterior part of disc suffused with pale fuscous; scales mostly slender and hair-like, with the exception of an elongate patch of large broad grey and black scales along fold; an obscure acutely dentate blackish transverse line from costa at $\frac{1}{4}$; an acutely dentate oblique blackish line from $\frac{3}{4}$ costa to $\frac{2}{3}$ dorsum; a subterminal series of elongate grey marks between veins, edged posteriorly with blackish; cilia dark fuscous. Hindwings with termen rounded, slightly wavy; white, on inner margin ochreous-tinged; a very small fuscous suffusion at apex; cilia white, bases fuscous, opposite veins mostly fuscous.

Vic. Birchip, in April (Goudie)—S.A. Adelaide, in May (Lower).

Gen. 2. NEOLA.

Neola, Wlk., Brit. Mus. Cat. v. p. 1033.

Head densely rough-haired, a pair of longer tufts from base of antennæ sometimes uniting to form a crest on crown. Eyes naked. Tongue well developed. Palpi short, porrect; second joint with long dense hairs beneath; terminal joint short, abruptly truncate. Antennæ in ♂ bipectinated to apex or nearly so. Thorax densely hairy above and beneath, with a high erect anterior crest. Abdomen with long hairs on base of dorsum. Femora densely hairy; posterior tibiæ with two pairs of spurs. Forewings with vein 2 from $\frac{2}{3}$, 3 from before angle, 6 from areole near base, 7 from end of areole, 10 from areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to near end of cell.

Type, *Neola semiaurata*, Wlk.

Differs from *Hyleora* only in vein 10 of forewing, which is connected by a bar with 8+9 opposite 7, whereas in *Neola* 10 anastomoses with 8+9 for some distance beyond 7. So far as my limited material goes this difference seems, in this instance, to be constant. Should it ultimately prove to be variable the two genera would have to be united.

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| 1. Hindwings golden-ochreous | <i>semiaurata</i> . |
| Hindwings reddish-brown | <i>capucina</i> . |

4. NEOLA SEMIAURATA.

Neola semiaurata, Wlk., Brit. Mus. Cat. v. p. 1033; Hch.-Sch., Ausser. Schmet. f. 549.

♂♀. 54-76 mm. Head and palpi brown-fuscous, with a few whitish scales. Antennæ brown-whitish, in ♀ darker. Thorax dark fuscous mixed with brown, irrorated with whitish especially on posterior surface of crest. Abdomen golden-ochreous; basal hairs, apex and lower surface brown. Legs brown; tarsi annulated with whitish. Forewings elongate-oval, costa slightly arched in ♂, more strongly in ♀, apex rounded, termen obliquely

rounded; dark fuscous mixed with brown and whitish; two whitish spots arranged longitudinally above mid-disc, resting on a median dark fuscous longitudinal streak; a white suffusion on mid-termen, and another on tornus; sometimes a smaller white suffusion on base of dorsum; cilia dark fuscous mixed with white. Hindwings with termen rounded; golden-ochreous; a broad fuscous terminal band narrowing to a point at tornus; cilia fuscous, apices whitish.

Type in British Museum.

Q. Brisbane—N.S.W. Sydney (Walker). Also, according to Walker, from Tasmania.

5. NEOLA CAPUCINA.

Hyleora capucina, Feld., Reise Nov. pl. 98, f. 1.

♂ 60 mm. Head and palpi brown; side-crests on crown white. Antennæ whitish, pectinations brown. Thorax dark brown; posterior surface of crest whitish. Abdomen pale ochreous-brown, basal segment darker. Legs brownish. Forewings elongate-oval, costa moderately arched, apex rounded, termen rounded, oblique; dark brown; a broad whitish streak along costa from base, narrowing towards apex; a similar broader streak along dorsum, narrow near base; some whitish suffusion near termen; cilia [abraded]. Hingwings with termen rounded; reddish-brown; cilia [abraded].

Vic. Melbourne (Felder); Gisborne, in January, one specimen in poor condition in Coll. Lyell.

Gen. 3. SORAMA.

Sorama, Wlk., Brit. Mus. Cat. v. p. 1034.

Head rough-haired, side-crests moderate. Eyes naked. Tongue well developed. Palpi short, porrect; second joint densely hairy beneath; terminal joint very short, obtuse. Antennæ in ♂ bipectinated, apical third simple; in female simple. Thorax densely hairy above and beneath, with a small median and a separate posterior crest. Femora densely hairy beneath;

posterior tibiae with two pairs of spurs. Forewings with vein 2 from $\frac{3}{5}$, 3 from well before angle, 6 from upper angle of cell or from near base of areole, 7 from end of areole, 10 from areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to beyond middle of cell, and connected with cell by a bar before middle.

Type, *Sorama bicolor*, Wlk.

Differs from *Neola* in the bar connecting vein 8 of hindwings from cell, the less pronounced anterior thoracic crest, and the pectinations of antennae of ♂ not extending to distal third.

6. SORAMA BICOLOR.

Sorama bicolor, Wlk., Brit. Mus. Cat. v. p. 1034.

♂♀. 52-74 mm. Head and palpi brown. Antennae whitish-ochreous, Thorax dark fuscous mixed with brown, with lustrous reflections. Abdomen pale reddish-brown. Legs reddish-brown. Forewings elongate-oval, costa slightly arched in ♂, moderately in ♀, apex round-pointed, termen slightly rounded, very oblique, crenulate; dark fuscous mixed with reddish-brown, with lustrous reflections, in ♀ mostly reddish-brown; a pale dentate line near base, obsolete towards dorsum; a similar line from $\frac{1}{4}$ costa to $\frac{1}{4}$ dorsum; an acutely dentate pale line from $\frac{2}{3}$ costa to $\frac{2}{3}$ dorsum; cilia dark fuscous. Hindwings with termen rounded, wavy; pale reddish-brown; cilia reddish-brown, apices paler.

Type in British Museum.

Q. Gympie (Illidge)—Vic. Gisborne (Lyell). According to Walker also from Tasmania.

Gen. 4. SPATALIA.

[σπαταλός, riotous; probably from the restlessness of the imago when confined in a small box.]

Spatalia, Hb., Verz. p. 145.

Head shortly rough-haired. Eyes naked. Tongue present. Palpi short, porrect, rough-haired beneath; terminal joint very short. Antennae with a large fan-like tuft of scales on anterior

aspect of basal joint in both sexes; in ♂ pectinated [to apex ?], in ♀ with short pectinations ($\frac{2}{3}$) towards base, laminate towards apex, with tufts of short cilia. Thorax with an acute anterior crest behind collar. Posterior tibiae with two pairs of spurs. Forewings with dorsal margin incised, a tuft of scales at each extremity of incision, anterior tuft larger; vein 2 from near angle, 3 from angle, 6 from upper angle, 7 from areole, 10 from 8 + 9 beyond areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 closely approximated to cell to $\frac{3}{4}$.

Type, *S. argentina*, Schiff., from Europe (Hampson).

7. SPATALIA COSTALIS.

Spatalia costalis, Moore, Lep. Atk. p. 69.

♀ 54 mm. Head, palpi, and antennæ fuscous brown. Thorax fuscous brown, posterior surface of crest whitish. Abdomen fuscous mixed with ochreous-whitish. Legs fuscous, irrorated and tarsi annulated with ochreous-whitish. Forewings elongate triangular, costa moderately arched, apex round-pointed, termen slightly rounded, oblique, dorsum with a short concavity beyond middle, on its anterior extremity a large squarish tuft of scales, on its posterior a small triangular tuft, fuscous brown; a very broad whitish streak occupies costal half of wing, bounded beneath by a line from mid-base to termen at $\frac{1}{3}$; this is irregularly suffused with brownish and fuscous, its lower edge is straight with a short projecting tooth in middle, before this it gives off a short bifurcating whitish streak along veins 2 and 3; dorsal portion of disc shows an angulated whitish line bordered with dark fuscous from costal streak to dorsum at $\frac{1}{4}$; a similar line to dorsum at $\frac{2}{3}$; a row of whitish subterminal lunules edged posteriorly with dark fuscous; cilia and dorsal tufts fuscous brown. Hindwings pale fuscous, towards base ochreous-whitish; cilia pale fuscous, towards tornus whitish.

N.Q. Townsville, in March; one specimen received from Mr. F. P. Dodd. Also from India.

Gen. 5. TELECLITA, gen. nov.

[τηλεκλειτός, far-famed.]

Head with loosely appressed scales; side-tufts moderate. Eyes naked. Tongue weak. Palpi moderate, porrect, shortly hairy beneath; terminal joint moderate, hairy. Antennæ in both sexes bipectinated, apical $\frac{1}{3}$ simple. Thorax with a very small posterior crest. Abdomen with a small crest on dorsum of first segment. Femora and tibiæ densely hairy; anterior tibiæ with a deep naked groove on internal surface; posterior tibiæ with two pairs of short spurs. Forewings with vein 2 from $\frac{3}{4}$, 3 from before angle, 6, 7, 8, 9, 10 stalked; no areole; 10 out of 8 + 9 before 7. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to near end of cell.

Differs from *Pheosia*, Hb., in the origin of vein 10 of forewings before 7. In neuration it agrees with *Fentonia*, Butl., as defined by Hampson ('Moths of India', i. p. 147) but the palpi appear to be different.

8. TELECLITA CYDISTA, n.sp.

[Κύδιστος, most glorious.]

♂♀. 56-76 mm. Head whitish-grey with a black longitudinal line; face and palpi dark fuscous irrorated with whitish. Antennæ whitish-grey, pectinations fuscous. Thorax whitish-grey with a central black stripe, at each side of which at posterior extremity is a small white spot. Abdomen grey; tuft whitish-grey; basal crest black. Legs grey; anterior and middle tarsi blackish anteriorly. Forewings elongate, proportionately broader in ♀, costa gently arched, apex round-pointed, termen rounded, very oblique; grey mixed with whitish and suffused especially towards base and apex with pale brownish; markings dark fuscous; a very short longitudinal streak from mid-base; a short broad transverse streak from costa at $\frac{1}{8}$; a similar streak from costa at $\frac{1}{4}$; a short outwardly-oblique grey streak from mid-costa; two short oblique streaks from costa at $\frac{5}{8}$, the first grey, the second dark fuscous; a longitudinal streak from just before apex towards or joining third

costal streak; a very fine almost obsolete line from fifth costal streak nearly to termen, whence it is continued as a well-marked dark fuscous line three times acutely dentate on veins to dorsum at $\frac{1}{5}$, and prolonged along dorsum towards base; cilia grey, interrupted by whitish opposite veins. Hindwings with termen gently rounded; white; a pale fuscous suffusion on costa to apex; a blackish triangular or roundish blotch at tornus; cilia grey, on tornal blotch blackish.

N.Q. Townsville, from March to June; five bred specimens received from Mr. Dodd.

This species very closely resembles *Pheosia strigata*, Moore, from India, which is doubtless congeneric. In the present species the thorax is grey; in *strigata* the thoracic white dots do not appear to be developed and the costal streaks on forewing are less oblique.

The larva, I am informed, feeds on a species of *Terminalia*; it is green with brown markings, and has four pairs of claspers and a backwardly curved dorsal protuberance on the third thoracic segment. The terminal abdominal segments are turned right over the back, their under surface, which is uppermost, is flattened and shaped something like a leaf. The larva spins a hard nut-like cocoon, and the head end of the pupa is provided with a terminal spike. Mr. Dodd has sent me a specimen of this extraordinary larva and one of the pupa preserved in spirit.

Gen. 6. CERURA.

[Apparently from *κνρός* wax, and *ούρα* a tail; probably in allusion to the pink protrusible filaments of the larva.]

Cerura, Schrank, *Fauna Boica*, ii. pt. ii. p. 155.

Head rough-haired. Eyes naked. Tongue weak. Palpi short; porrect, clothed with long hairs; terminal joint concealed. Antennæ with basal joint covered with long hairs, pectinated to apex in both sexes. Posterior tibiæ without middle spurs. Forewings with retinaculum bar-shaped in male, vein 2 from $\frac{4}{5}$, 3 from angle, 5 from near upper angle, 6 from end of areole, 10

from areole or from 8+9 before 7. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 connected by a bar with middle of cell.

Type, *Cerura furcula*, Schrank, from Europe (Hampson). A very natural genus from which *Dicranura*, Boisd., is unnecessarily separated by some authors.

9. CERURA AUSTRALIS.

Cerura australis, Scott, Aust. Lepid. pl. v.

♂ 66 mm. Head white. Palpi black. Antennæ blackish irrorated, and towards base suffused, with white; pectinations fuscous brown. Thorax white with nine lustrous peacock-blue spots arranged in two transverse rows of four each, the lateral spots being on bases and apices of patagia, the ninth spot is near posterior end of thorax. Abdomen dark fuscous; extreme base, a dorsal median line, and apical segment whitish; the last crossed by a blackish line. Legs white; anterior surface of anterior tibiæ and anterior and middle tarsi except at base black; middle and posterior tibiæ spotted with black; posterior tarsi black with white annulations. Forewings elongate-triangular, costa nearly straight, apex rounded, termen rounded, oblique; white with black dots arranged in transverse lines; a dot at base; a broken row of dots from $\frac{1}{10}$ costa to $\frac{1}{4}$ dorsum; a row of large dots with pale centres from $\frac{1}{5}$ costa to before mid-dorsum; four rows of dots posterior to this, the dots on costa being larger than those on disc; in the most posterior of these the dots are confluent towards costa; a row of longitudinally elongate terminal dots between veins; cilia short; white, on dots black. Hindwings with termen rounded; white, thinly scaled; a series of blackish dots on termen, the largest opposite tornus; a dark fuscous suffusion along inner margin.

N.S.W. Ash Island, near Newcastle (Scott).

This species appears to be local for I am not aware that it has been met with elsewhere. Scott's beautiful figure shows the larva to be closely similar to the European *C. vinula*, Linn.

Gen. 7. PHERESSACES, gen.nov.

[φέρεσσακής, a shield-bearer.]

Head with appressed scales. Eyes naked. Tongue absent. Palpi short, porrect. Antennæ with basal $\frac{2}{3}$ pectinated in both sexes, apical third simple. Posterior tibiæ with two pairs of spurs. Forewings with rectinaculum bar-shaped in ♂; vein 2 from $\frac{1}{5}$, 3 from angle, 5 from above middle of cell, 10 from 8 + 9, or from areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to end of cell.

Type, *P. cynoptera*, Low.

10. PHERESSACES CYCNOPTERA.

[κύκνος a swan, πτερόν a wing.]

Notodonta cynoptera, Low., Trans. R. Soc. S.A. 1894, p. 78.

♂ ♀ 32-41 mm. Head, thorax, and antennæ grey. Palpi clothed with long hairs beneath; dark fuscous, internal surface whitish. Abdomen grey. Legs whitish-grey, tarsi annulated with fuscous. Forewings elongate-oval, costa moderately arched, apex round-pointed, termen rounded, very oblique; vein 10 from 8 + 9 beyond areole; grey irrorated with white; markings blackish; a short outwardly oblique line from costa near base, acutely angulated beneath costa, and again nearer base; a whitish basal suffusion bounded by a fine dentate line, sometimes obsolete, from costa at $\frac{1}{4}$, forming a long narrow outward loop beneath costa, and ending in dorsum at $\frac{1}{3}$; a well marked line from $\frac{2}{3}$ costa, inwardly oblique, narrowing in disc, and continued by short streaks on veins to dorsum beyond middle; this is immediately followed by a whitish line; an obscure dentate whitish subterminal line; an interrupted blackish terminal line; cilia grey mixed with whitish. Hindwings with termen rounded, slightly sigmoid towards tornus; white; a fuscous blotch at apex continued as a band or line along termen to tornus; cilia white.

Type in Coll. Lower.

N.Q. Townsville, in February.—Q. Duaringa.

Mr. F. P. Dodd has bred the larvæ which are pale green, smooth, cylindrical, with two tails nearly an inch long, each containing a protrusible filament.

11. PHERESSACES SPIRUCHA, n.sp.

[σπειροῦχος, containing a circle.]

♂ 38 mm. Head and thorax grey. Palpi clothed with short appressed hairs; dark fuscous. Antennæ ochreous-whitish. Abdomen grey. Legs grey. Forewings elongate, costa slightly arched, apex round-pointed, termen rounded, very oblique; vein 10 from areole; grey, towards costa irrorated by dark fuscous; veins narrowly blackish; a slightly waved transverse blackish line near base; a second similar line from $\frac{2}{3}$ costa to mid-dorsum, connected on costa with an outwardly curved line to dorsum near tornus, the two forming an incomplete circle; cilia grey. Hindwings with termen rounded; whitish, on costa suffused with fuscous, cilia white.

This species differs slightly in the scaling of the palpi and neururation from the preceding, and the posterior legs are broken, so its generic position is not quite assured.

Type in Coll. Agricultural Department, Queensland.

Q. Brisbane; one specimen.

Gen. 8. ENOSANDA.

Enosanda, Wlk., Brit. Mus. Cat. vii. p. 1713.

Head shortly rough-haired; face with a rounded horny prominence, naked in the centre. Eyes naked. Tongue obsolete. Palpi very short, clothed with long hairs beneath; terminal joint obsolete. Antennæ in ♂ bipectinated to apex, in ♀ simple. Abdomen in ♀ with a dense hairy tuft at apex. Posterior tibiae with two pairs of spurs. Forewings with vein 2 from $\frac{5}{6}$, 3 from angle, 5 from middle of cell, 6 from about or beyond middle of areole, 7 from areole or from 8 + 9 shortly beyond areole, 10 from areole. Hindwings with 3 and 4 connate or stalked, 5 obsolete,

6 and 7 long-stalked or 6 absent, 8 approximated to near end of cell.

Contains only the following species.

Newman spelt the generic name *Enosandra*, referring it to Walker and giving no description. In the British Museum Catalogue Walker describes it as *Enosanda*.

12. *ENOSANDA* BOISDUVALII.

♀. *Enosandra boisduvalii*, Newm., Trans. Ent. Soc. n.s. iii. p. 286.

♂. *Teara* (?) *terminalis*, Wlk., Brit. Mus. Cat. vii. p. 1733.

♂. *Pterygosoma squamipunctum*, Feld., Reise Nov. pl. 98, f. 7.

♂ 44.50 mm. Head and palpi fuscous. Antennæ fuscous, basal joint with a terminal white ring, pectinations whitish-ochreous. Thorax fuscous, in centre mixed with white. Abdomen black, apices of segments on dorsum and tuft bright ochreous. Legs fuscous, tarsi annulated with white. Forewings elongate, costa moderately arched, apex rounded, termen rounded, very oblique; grey, irrorated with dark fuscous along costa; scattered in disc are very large black and ochreous scales; cilia grey. Hindwings with termen rounded; whitish, towards base and inner margin fuscous; a fuscous discal spot; a narrow grey terminal line; cilia whitish, on tornus and inner margin fuscous.

♀ 46.58 mm. Head and thorax white. Palpi fuscous. Antennæ dark fuscous, basal joint white. Abdomen as in ♂ but tuft much larger and paler. Legs fuscous brown; tibiæ and tarsi dark fuscous with white annulations. Forewings shaped as in male; pure white; costa narrowly fuscous; a broad central black streak prolonged at base to dorsum, containing a few white and ochreous scales, and reaching almost to apex; cilia white. Hindwings and cilia white.

Vic. Gisborne, in March; received from Mr. S. Lyell.

Gen. 9. *DANIMA*.

Danima, Wlk., Brit. Mus. Cat. v. p. 1053.

Head shortly rough-haired. Eyes naked. Tongue well developed. Palpi short, porrect; second joint with long hairs

beneath; terminal joint minute, pointed. Antennæ in ♂ with basal half pectinated, apical half simple; in ♀ simple. Thorax with loose hairs forming a slight posterior crest. Posterior tibiae with two pairs of spurs. Forewings with 2 from $\frac{3}{4}$, 3 from shortly before angle, 6 from upper angle of cell or from near base of areole, 7 from end of areole or from 8+9 near areole, 10 from areole. Hindwings with 3 and 4 closely approximated at base, 6 and 7 stalked, 8 approximated to near end of cell.

Type, *Damiana banksiae*, Lew.

13. DANIMA BANKSIÆ.

Bombyx banksiae, Lew., Lepid. N.S.W. (1822) pl. ix.

♂♀. 58-84 mm. Head and palpi fuscous. Antennæ whitish-ochreous, stalk towards apex dark fuscous. Thorax dark fuscous with a few white and ochreous scales; patagia white with a few ochreous scales. Abdomen bright ochreous; three terminal segments and under surface dark fuscous; apical hairs of ♀ whitish. Legs dark fuscous. Forewings in ♂ elongate, in ♀ elongate-triangular, costa in ♂ straight to near apex, in ♀ moderately arched, apex rounded, termen rounded, strongly oblique; grey with sparsely scattered large triangular white scales; markings blackish irrorated with ochreous; a small spot beneath costa near base; a larger spot on costa at $\frac{1}{4}$; a broad streak from mid-costa obliquely outwards, becoming longitudinal in disc, not reaching termen; a small suffused spot on costa at $\frac{5}{8}$; a fuscous suffusion on base of dorsum; three spots on fold, sometimes suffusedly connected with dorsum; cilia grey. Hindwings with termen gently rounded; in ♂ whitish, suffused with fuscous towards inner margin; in ♀ wholly fuscous; cilia in ♂ whitish, in ♀ fuscous with whitish apices, on inner margin mixed with ochreous.

Q. Brisbane, in January—Vic. Melbourne (Lyell).

Gen. 10. DESTOLMIA.

Destolmia, Wlk., Brit. Mus. Cat. v. p. 991.

Head shortly rough-haired. Eyes naked. Tongue well developed. Palpi short, porrect; second joint densely scaled beneath; terminal

joint concealed. Antennæ of ♂ bipectinated to about middle, terminal half simple; of ♀ simple. Thorax with a rounded anterior crest, and a small rounded sometimes bifid posterior crest. Posterior tibiae with two pairs of spurs. Forewings with vein 2 from $\frac{2}{3}$, 3 from well before angle, 6 from upper angle of cell or from areole near base, 7 from end of areole, 10 from end of areole or from 8+9 beyond areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to beyond middle of cell.

Type, *D. lineata*, Wlk.

1. Forewings with transverse lines more or less obsolete, acutely dentate..... *lineata*.
Forewings with three very distinct transverse lines, not dentate *nigrolinea*.

14. DESTOLMIA LINEATA.

Destolmia lineata, Wlk., Brit. Mus. Cat. v. p. 992.

Collyta lanceolata, Wlk., Brit. Mus. Cat. xxxii. p. 452.

Notodonta cinerea, Luc., Proc. Roy. Soc. Qsld. 1891, p. 78.

♂ ♀ 48-60 mm. Head and palpi whitish-grey. Antennæ in ♂ whitish, pectinations ochreous-tinged, in ♀ fuscous. Thorax whitish-grey, collar suffused with brownish. Abdomen grey. Legs whitish-grey. Forewings elongate-triangular, costa slightly arched in ♂, more strongly in ♀, termen slightly rounded, wavy, very oblique; whitish-grey; an indistinct, strongly dentate, dark fuscous transverse line from $\frac{1}{4}$ costa to $\frac{2}{3}$ dorsum; a similar posterior line from about mid-costa obliquely outwards, acutely angled in disc and continued to mid-dorsum; a variably developed series of fine black streaks between veins in posterior part of disc; cilia grey. Hindwings with termen slightly rounded, wavy; pale grey; cilia grey, apices white.

Type in British Museum.

Q. Brisbane. Walker gives also Sydney and Swan River as localities, but the latter requires confirmation.

Somewhat variable; *D. lanceolata*, Wlk., has a dark fuscous suffusion from base of dorsum to mid-termen; other specimens have a median dark fuscous suffusion.

15. DESTOLMIA NIGROLINEA.

Notodonta nigrolinea, Luc., Trans. Nat. Hist. Soc. Qsld. 1894, p. 107.

♀ 50 mm. Head, thorax, and palpi grey, finely irrorated with white. Antennæ ochreous-grey. Abdomen grey, apical segments finely irrorated with whitish. Legs grey, tarsi dark fuscous, irrorated with whitish. Forewings elongate, costa nearly straight except near base and apex, termen bowed; grey finely irrorated with whitish-grey; veins finely outlined with blackish; with three blackish transverse lines; first from $\frac{1}{6}$ costa to $\frac{1}{6}$ dorsum, nearly straight; second from $\frac{2}{5}$ costa to $\frac{2}{5}$ dorsum, slightly sigmoid, third from $\frac{2}{3}$ costa to before tornus, slightly outwardly curved near costa; a dark fuscous linear mark in disc above middle between second and third lines; a dark grey subterminal suffusion, posteriorly finely dentate, from costa two-thirds across disc; cilia grey. Hindwings with termen rounded; whitish, thickly covered with grey hairs, especially towards inner margin; cilia dark grey, apices white.

Type in Coll. Lucas.

Q. Brisbane, in February; one specimen taken at light.

Gen. 11. PHERASPIS, gen. nov.

[φέρασπις, a shield bearer.]

Head rough-haired. Eyes naked. Tongue weak or absent. Palpi short, or moderate, porrect or slightly ascending; terminal joint short. Antennæ in ♂ pectinated to apex, in ♀ shortly pectinated or simple. Thorax with a slight posterior crest. Posterior tibiae with two pairs of spurs. Forewings with 2 from $\frac{4}{5}$, 3 from angle; 6 from areole before or near middle, 7 from 8 + 9 beyond areole, 10 from areole. Hindwings with 3 and 4 separate or connate, 6 and 7 stalked, 8 approximated to cell.

Type, *P. polioxutha*, Turn.

- | | |
|--|---------------------|
| 1. Hindwings tawny..... | 2. |
| Hindwings not tawny..... | <i>spodea</i> . |
| 2. Forewings with a longitudinal blackish streak from base.... | <i>mesotypa</i> . |
| Forewings without median streak..... | <i>polioxutha</i> . |

16. *PHERASPIS POLIOXUTHA*, n.sp.

[πολιός grey, and ξοιθός tawny.]

♂ ♀ 44-56 mm. Head, palpi, and thorax whitish-grey. Antennæ whitish, bipectinated in both sexes. Abdomen deep ochreous; the three terminal segments dark grey. Legs whitish-grey; anterior tarsi dark fuscous annulated with whitish. Forewings elongate-triangular, costa moderately arched, apex rounded, termen rounded, oblique; whitish-grey, lines fuscous; a short, sometimes dentate, line from $\frac{1}{8}$ costa, slightly outwardly curved, not reaching dorsum; an acutely dentate line from $\frac{1}{4}$ costa to $\frac{1}{3}$ dorsum; a small fuscous suffusion on mid-costa sometimes produced across disc as a faint suffused line; a finely dentate line from $\frac{3}{4}$ costa, slightly sigmoid, to $\frac{2}{3}$ dorsum; a sub-terminal series of dots more or less developed, and an interrupted terminal line; cilia whitish-grey. Hindwings with termen rounded; whitish-ochreous, sometimes suffused with fuscous, towards inner margin ochreous, terminal area sometimes suffused with greyish; cilia whitish-ochreous.

Type in Coll. Turner.

N.Q. Townsville, in February; two bred specimens received from Mr. F. P. Dodd. There is an example from Cardwell in the Queensland Museum, and another from Cooktown in Coll. Lyell.

17. *PHERASPIS MESOTYPA*, n.sp.

[μέσος middle, τύπος a mark, impression.]

♂ ♀ 48-50 mm. Head whitish, mixed with a few grey hairs on crown. Palpi brown. Antennæ ochreous-whitish; in ♀ simple. Thorax whitish mixed with grey. Abdomen orange-ochreous. Legs whitish; anterior pair brown anteriorly. Forewings elongate-oval, costa gently arched, apex rounded, termen rounded, oblique, whitish irrorated with grey; a well marked dark fuscous streak from base along fold to $\frac{2}{3}$, thence continued obliquely by a series of short longitudinal streaks to apex; a faint interrupted grey line close to termen; cilia whitish mixed with grey. Hindwings

with termen rounded; grey; towards base and inner margin ochreous; cilia grey, on inner margin ochreous.

Type in Coll. Agricultural Department, Queensland.

N.Q. Townsville, in January and February; two specimens received from Mr. F. P. Dodd. Also from Thursday Island.

The palpi are rather longer than in *P. polioxutha*, and the second joint with shorter hairs.

18. PHERASPIS SPODEA, n.sp.

[σποδός ashes; ash-coloured.]

♀. 56 mm. Head white; face white with a transverse brown line near upper edge. Palpi white, external surface brown. Antennæ brown; in ♀ simple. Thorax with a small posterior crest; whitish, with a brown transverse line across collar. Abdomen whitish, dorsum of basal segments suffused with brownish. Legs whitish; anterior pair brown anteriorly. Forewings elongate-oval, costa moderately arched, apex rounded, termen rounded, oblique; whitish sparsely irrorated with grey; lines grey, suffused; first from costa at $\frac{1}{3}$ obliquely outwards, angulated inward near costa, to dorsum at $\frac{1}{3}$; second from costa at $\frac{2}{5}$, first outwardly curved then slightly sigmoid to dorsum at $\frac{2}{3}$; an indistinct subterminal line, edged posteriorly with white, angulated three times in disc; cilia grey, interrupted with whitish on veins; apices whitish. Hindwings with termen rounded; grey, at apex and tornus whitish; cilia whitish-grey.

Type in Coll. Turner.

Q. Brisbane, in January; one perfect specimen taken at light.

Gen. 12. THEMERASTIS, gen.nov.

[θεμερός grave, serious.]

Head shortly rough-haired; face rounded, somewhat projecting. Eyes smooth, partly overlapped by a tuft of long hairs from posterior inferior quadrant. Tongue well developed. Antennæ in ♂ bipectinated to apex. Palpi very short, porrect; terminal joint minute. Thorax with a slight posterior crest. Posterior

tibiæ with two pairs of spurs. Forewings with vein 2 from near angle, 6 from areole near end, 10 from end of areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to near end of cell.

Distinguishable from *Pheraspis* by the well developed tongue, rounded projecting face, and origin of vein 6 of forewings from near end of areole.

19. *THEMERASTIS CELAENA*, n.sp.

[κελαινός dark, blackish.]

♂. 45 mm. Head, palpi, and thorax dark fuscous. Antennæ grey. Abdomen grey mixed with dull ochreous. Legs grey. Forewings elongate, costa strongly arched, apex rounded-rectangular, termen rounded, oblique; dark fuscous-grey, lines blackish; two parallel, slightly wavy, outwardly curved transverse lines near base; a fine slightly wavy outwardly curved line from $\frac{1}{4}$ costa to mid-dorsum; this is preceded near costa by a small circular blackish ring, and followed at mid-disc by a larger oval ring; a fine line from $\frac{3}{4}$ costa several times angulated in disc to $\frac{3}{4}$ dorsum; traces of a pale subterminal line; a fine dark terminal line; cilia grey. Hindwings with termen rounded; whitish, towards termen suffused with dark fuscous; cilia fuscous.

Type in Coll. Lyell.

Vic. Melbourne; one specimen.

Gen 13. *PHALERA*.

[φαληρός with a pale or whitish head.]

Phalera, Hb., Verz. p. 146.

Head shortly rough-haired. Eyes naked. Tongue present. Palpi short, porrect, densely hairy beneath; terminal joint very short. Antennæ of ♂ laminate with fascicles of cilia; of ♀ simple. Thorax with a small posterior crest. Anterior tibiæ with a naked groove on underside; posterior tibiæ with two pairs of spurs. Forewings with vein 2 from $\frac{2}{3}$, 3 from angle, 6 from areole, 7 from end of areole or from beyond areole, 10 from 8 + 9 beyond areole or from areole. Hindwings with 3 and 4 separate,

connate, or stalked, 6 and 7 stalked, 8 approximated to near end of cell.

Type, *P. bucephala*, Linn., from Europe.

20. PHALERA RAYA.

Phalera raya, Moore, Lep. E. I. Co. p. 433; Butl., Ill. Het. vi., pl. ciii., fig. 1.

Phalera grotei, Moore, *op. cit.*, p. 434.

Phalera cossoides, Wlk., Trans. Ent. Soc. 1862, p. 80.

Acrosema amboinæ, Feld., Reise Nov. pl. xevi., fig. 2.

♀. 65 mm. Head pale ochreous, lower half of face brown. Palpi pale ochreous, external surface irrorated with brown. Thorax reddish-brown mixed with white; collar and a squarish anterior blotch brownish-ochreous. Abdomen fuscous. Legs fuscous mixed with whitish; anterior femora with anterior surface pale ochreous edged externally with brown. Forewings elongate-triangular, costa moderately arched, apex rounded, termen rounded, crenulate, strongly oblique; reddish-brown irrorated with white, the white scales preponderating towards dorsum; lines fuscous-brown; an outwardly curved transverse line near base and another at $\frac{1}{5}$; traces of a median line; a posterior line from costa at $\frac{3}{4}$, at first inwardly curved, then angulated in disc and slightly wavy to dorsum at $\frac{3}{4}$; a large subtriangular ochreous-brown blotch between posterior line and apex; a white suffusion at tornus; an indistinct subterminal line; cilia reddish-brown mixed with white. Hindwings with termen rounded; fuscous; a suffused paler posterior line; cilia fuscous mixed with whitish.

N.Q. Cape York. one specimen in the Queensland Museum; Cooktown, one specimen in Coll. Illidge. Also from Amboyna (Felder) and India.

Gen. 14. DISCOPHLEBIA.

[*δίσκος*, a plate, disc, *φλέψ*, a vein; with veined disc.]

Discophlebia, Feld.

Head smooth. Eyes smooth, overlapped by a tuft of long hairs arising from posterior inferior quadrant. Tongue well developed.

Palpi short, porrect, with loosely appressed scales beneath, not hairy; terminal joint very short. Antennæ of ♂ laminate with fascicles of cilia, of ♀ simple. Thorax not crested. Anterior tibiæ with a naked groove on underside, overlapped by a proximal tuft of hairs; posterior tibiæ with two pairs of spurs. Forewings with vein 2 from $\frac{5}{8}$ to $\frac{7}{8}$, 3 from angle, 6 from middle or beyond middle of areole, 7 from end of areole, 10 from areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to near end of cell.

In structure this resembles *Phalera*, Hb., but differs in the smooth head and palpi, and in the origin of vein 2 of forewings from nearer angle of cell.

Type, *Discophlebia catocalina*, Feld.

- | | |
|--|---------------------|
| 1. Hindwings with a broad white terminal band..... | <i>catocalina</i> . |
| Hindwings without a broad white terminal band..... | 2. |
| 2. Hindwings with termen narrowly white..... | <i>bloserodes</i> . |
| Hindwings with termen not white..... | <i>lucasi</i> . |

21. DISCOPHEBLIA CATOCALINA.

[Probably from a supposed resemblance to the genus *Catocala*.]

Discophlebia catocalina, Feld., Reise Nov. pl. 96, f. 8.

♂. 48 mm. Head grey, vertex whitish-grey. Palpi dark fuscous mixed with grey. Antennæ grey. Thorax grey, collar dark grey. Abdomen dark fuscous; tuft ochreous-whitish. Legs dark grey mixed with whitish. Forewings elongate-oblong, costa strongly arched, apex rounded-rectangular, termen slightly oblique, rounded towards tornus; grey, near base suffused with whitish; lines blackish; an irregularly waved line from $\frac{1}{4}$ costa to $\frac{2}{3}$ dorsum; a short outwardly-oblique streak from costa at $\frac{2}{3}$; a pale circular discal spot succeeds first line, and a larger spot, faintly outlined in fuscous, is situated at apex of the oblique streak; a posterior line from before mid-costa very obliquely outwards, obtusely bent in disc to become transverse, and ending in dorsum at $\frac{3}{4}$; veins beyond this streaked with blackish; cilia whitish-grey, intersected by continuations of streaks on veins. Hindwings with termen rounded; dark fuscous; a broad white terminal band narrowing to

a point before tornus; cilia white, on tornus and inner margin dark fuscous.

Vic. Birchip, in May, one specimen in Coll. Lyell—S.A. Adelaide (Felder).

22. DISCOPHLEBIA BLOSYRODES, n.sp.

[βλοσυρωδης, of stern appearance.]

♀. 43 mm. Head grey, with a blackish line across crown, and another across middle of face. Palpi and antennæ grey. Thorax grey; patagia tipped with dark fuscous. Abdomen dark fuscous; apical segments pale ochreous. Legs grey. Forewings elongate-oval; costa very strongly arched, termen obliquely rounded; iron-grey; veins partly finely outlined with black; lines black, a short basal line from costa, not reaching but produced parallel to dorsum for a short distance; a thick nearly straight line from $\frac{1}{6}$ costa to $\frac{1}{4}$ dorsum; a finer line from costa slightly beyond this, outwardly curved to mid-dorsum; a third line from costa before middle to $\frac{3}{4}$ dorsum, obtusely angled in disc; cilia whitish-grey, narrowly intersected with blackish opposite veins. Hindwings with termen rounded; dark fuscous; termen narrowly white except at tornus; cilia as forewings, but on tornus and inner margin dark fuscous.

Type in Coll. Turner.

N.Q. Townsville, in October; one specimen received from Mr. F. P. Dodd.

23. DISCOPHLEBIA LUCASII.

Discophlebia lucasii, Rosen., Ann. Mag. Nat. Hist. 1885, p. 421, pl. xi., f. 4.

Type in British Museum.

I have before me a specimen from Victoria which I believe to belong to this species, but as the identification is not quite certain I forbear to describe it.

Gen. 15. GALLABA.

Gallaba, Wlk., Brit. Mus. Cat. xxxii. 457.

Head rough-haired; face with projecting cone of hairs. Eyes naked. Tongue well developed. Palpi long ($2\frac{1}{2}$ times breadth

of eye); second joint very long, somewhat ascending, rough-haired above and beneath; terminal joint well developed, loose-haired, porrect. Antennæ in both sexes bipectinated to apex. Thorax smooth; but patagia long, dense-scaled, projecting upwards and backwards as far as posterior edge of thorax. Abdomen with a small basal crest on dorsum of first segment. Anterior tibiæ in both sexes with a naked groove overlapped by a dense tuft of hairs on posterior surface; posterior tibiæ with two pairs of spurs. Forewings with vein 2 from $\frac{4}{5}$ or from near angle, 3 from angle, 5 from slightly below middle of cell, 6 from areole, 7 from areole near apex, 10 from areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated to near end of cell.

Type, *Gallaba duplicata*, Wlk.

A very distinct genus easily recognised by the peculiar palpi and patagia.

- | | |
|------------------------------|---------------------|
| 1. Forewings dark brown..... | <i>duplicata</i> . |
| Forewings grey..... | <i>ochropepla</i> . |

24. GALLABA DUPLICATA.

[Duplicatus, doubled; perhaps in allusion to the patagia.]

Gallaba duplicata, Wlk., Brit. Mus. Cat. xxxii. 458.

♂♀. 37-40 mm. Head and palpi fuscous-brown mixed with whitish. Antennæ ochreous-whitish, near base fuscous-brown mixed with white; bases of pectinations blackish. Thorax fuscous-brown with a few whitish scales; apices of patagia darker. Abdomen pale fuscous or whitish; basal crest dark fuscous-brown. Legs whitish; anterior pair fuscous, tarsi annulated with whitish. Forewings oblong, costa strongly arched at base, thence nearly straight, apex rounded-rectangular, termen rounded, slightly oblique; fuscous-brown mixed with whitish and a few reddish-brown scales; anterior and posterior lines faintly indicated; a blackish dot margined with whitish in costal part of disc before middle, with sometimes two or three similar smaller dots in a transverse line between it and dorsum; an elongate transverse black dot margined with whitish on mid-disc, sometimes obsolete;

sometimes a series of dark crescentic marks posteriorly edged with whitish, forming a subterminal line; cilia fuscous. Hindwings with termen sigmoid; fuscous sometimes inclining to whitish; cilia concolorous.

Type in British Museum.

Q. Brisbane, in May; one specimen (♂) in Queensland Museum and one (♀) in Coll. Illidge.

25. *GALLABA OCHROPEPLA*, n.sp.

[ὥχρός, pale; πέπλος, a cloak.]

♀. 38 mm. Head white mixed with grey on vertex. Palpi white. Antennæ grey, base of stalk white. Thorax grey mixed with white. Abdomen whitish. Legs whitish; anterior pair grey mixed with white. Forewings elongate; costa moderately arched, apex pointed, termen slightly rounded, oblique; whitish-grey, irrorated with grey, centre of disc suffused with white, a small oblique fuscous streak close to mid-base, closely succeeded by a similar streak in disc; two parallel grey lines, rather outwardly curved, from $\frac{1}{4}$ costa to $\frac{1}{3}$ dorsum; two similar parallel lines, interrupted in disc from $\frac{2}{3}$ costa to $\frac{3}{4}$ dorsum; a series of dark grey streaks forming an interrupted subterminal line; cilia grey mixed with whitish-grey. Hindwings with termen sigmoid; pale grey; cilia pale grey.

Type in Coll. Lyell.

Vic. Ocean Grange, near Sale, in January; one specimen.

Gen. 16. *ECNOMODES*, gen.nov.

[ἐκνομωδης of unusual appearance.]

Head rough-haired. Eyes naked. Tongue obsolete. Palpi shortly rough-scaled, in ♂ recurved and reaching to vertex; in ♀ rather shorter, porrect; terminal joint moderate, bent forwards. Antennæ pectinated to apex in both sexes. Thorax with an erect anterior crest. Posterior tibiae with two pairs of spurs; anterior tibiae in ♂ with a long tuft of hairs beneath. Forewings with vein 2 from $\frac{3}{5}$, 3 from well before angle, 6 from near base of

areole, 7 from end of areole, 10 from areole. Hindwings with 3 and 4 widely separate at base, 6 and 7 stalked, 8 approximated to cell to beyond middle.

Type, *E. sagittaria*, Luc.

26. Ecnomodes sagittaria.

[Sagittarius, marked with arrows.]

Chlenias sagittaria, Luc., Proc. R. Soc. Qsld. 1899, p. 148.

♂♀. 34-40 mm. Head brown; face whitish with a brown transverse line across forehead. Palpi brown, internal surface whitish. Antennæ whitish; stalk in ♂ brownish. Thorax whitish mixed with brown. Abdomen whitish. Legs whitish; anterior pair dark brown. Forewings elongate-triangular, costa moderately arched, apex rounded, termen rounded, oblique; whitish with some brownish irroration, markings dark fuscous; a subcostal streak more or less distinct from base to $\frac{2}{3}$, connected with costa at $\frac{1}{3}$ and beyond middle; a short streak from near base along fold; a suffused median streak from $\frac{1}{4}$, interrupted beyond middle, and continued to apex; an acutely dentate line from median streak beyond interruption to dorsum at $\frac{3}{4}$; fine streaks along veins near apex; cilia whitish mixed with brownish. Hindwings with termen rounded; whitish, towards termen suffused with pale fuscous; cilia whitish mixed with fuscous except on inner margin.

Type in Coll. Lucas.

Q. Brisbane.

Gen. 17. GARGETTA.

Gargetta, Wlk., Brit. Mus. Cat. xxxii. p. 455.

Head with loosely appressed hairs. Eyes smooth, partly covered (in *G. acarodes*) by a tuft of long hairs arising from margin in lower posterior quadrant. Tongue well developed. Palpi ascending, not quite reaching vertex; second joint with loosely appressed scales; terminal joint short. Antennæ bipectinated to apex in both sexes. Thorax not crested. Posterior tibiae

with two pairs of long spurs; anterior tibiæ in ♂ with a naked groove beneath, partly overlapped by a posterior crest of scales. Forewing in ♂ with a long tuft of hairs from base of dorsum beneath; vein 2 from $\frac{1}{5}$, 3 from well before angle, 6 from upper angle of cell immediately below areole, 7 from 8 + 9 just below areole, 10 from areole, which is broadly lozenge-shaped, extending as much before and beyond end of cell. Hindwings with 3 and 4 connate, 6 and 7 stalked, 8 closely approximated to cell to beyond middle. Type, *G. costigera*, Wlk., from India.

27. GARGETTA ACARODES, n.sp.

[ἀκαρώδης, rather small.]

♂♀. 28-30 mm. Head pale fuscous. Palpi dark fuscous. Antennæ whitish, pectinations ochreous-tinged. Thorax pale fuscous mixed with whitish. Abdomen pale fuscous. Legs fuscous; tarsi with obscure paler annulations. Forewings elongate, costa moderately arched, apex rounded, termen slightly rounded, oblique; pale fuscous irrorated with white, markings dark fuscous; a narrow streak from base to mid-disc, nearer costa than dorsum; a squarish spot on costa at $\frac{1}{3}$; a small spot beyond this both on costa and dorsum; a strongly waved line situated in a narrow white suffusion from costa at $\frac{2}{3}$ to dorsum at $\frac{3}{4}$; beyond this costa and veins are streaked with dark fuscous; two whitish dots on apical $\frac{1}{4}$ of costa; a faintly marked white subterminal line interrupting streaks on veins; a series of dark fuscous terminal dots; cilia white, bases barred with dark fuscous. Hindwings somewhat elongate, termen slightly sigmoid; grey, towards termen darker; cilia whitish.

Type in Coll. Turner.

N.Q. Townsville, in March and May; two specimens received from Mr. F. P. Dodd.

Gen. 18. OSICA.

Osica, Wlk., Brit. Mus. Cat. xxxiii. 766.

Head with loosely appressed scales. Eyes naked. Tongue well developed. Palpi long, recurved, reaching or exceeding

vertex; second joint with a dense projecting anterior tuft at apex; terminal joint moderate in ♂, rather long in ♀, smooth-scaled. Antennæ simple, in ♂ ciliated. Thorax with a slight posterior crest. Abdomen with a small dorsal crest on first segment. Anterior tibiæ with a groove beneath completely overlapped by a posterior tuft of scales; posterior tibiæ with two pairs of large scales. Forewings with vein 2 from $\frac{3}{4}$, 3 from well before angle, 6 from near end of areole, which is small, 7 from 8 + 9 well beyond areole, 10 from 8 + 9 beyond 7. Hindwings with 3 and 4 connate, 6 and 7 stalked, 8 closely approximated to beyond middle of cell.

Type, *O. glauca*, Wlk.

Our knowledge of structure has advanced somewhat since Walker described this genus among the *Noctuidæ*, with the remark that it had some resemblance to the *Galleridæ*.

28. OSICA GLAUCA.

[*γλαυκός*, greenish.]

Osica glauca, Wlk., Brit. Mus. Cat. xxxiii. 767.

♂♀. 46-60 mm. Head and antennæ pale brownish. Palpi fuscous-brown, terminal joint pale brownish. Thorax brown-whitish, in ♀ greenish-grey mixed with brown; collar brown. Abdomen grey. Legs brownish; anterior tarsi dark fuscous, ends of joints narrowly white. Forewings elongate, costa moderately arched, apex rectangular, termen slightly rounded, slightly oblique; brownish suffused with brown-whitish or grey; with numerous darker brown indistinct transverse lines, mostly represented by dots on veins; a large pale squarish discal spot margined anteriorly and posteriorly by dark brown; shortly beyond this is a fine sigmoid dentate line from $\frac{2}{5}$ costa to mid-dorsum; a subterminal series of dark brown dots; a fine interrupted dark fuscous terminal line; cilia brown-whitish mixed with dark brown. Hindwings about twice breadth of forewings, termen rounded; dark grey; cilia grey.

Type in British Museum.

Q. Brisbane, in August.

Gen. 19. CASCERA.

Cascera, Wlk., Brit. Mus. Cat. xxxii. p. 460.

Head rough-haired. Eyes naked. Tongue well developed. Palpi recurved, ascending, reaching vertex; second joint very long, anteriorly rough-scaled; terminal joint moderate. Antennæ in ♂ bipectinated, apical $\frac{1}{4}$ simple; in ♀ simple. Thorax with a small posterior crest. Posterior tibiæ with two pairs of spurs. Forewings with 2 from $\frac{3}{4}$, 3 from angle, 6 from areole before or beyond middle, 7 from end of areole or from 8 + 9 beyond areole, 10 from areole. Hindwings with 3 and 4 separate, 6 and 7 stalked, 8 approximated (sometimes anastomosing) to beyond middle of cell.

Type, *C. muscosa*, Wlk.

- | | |
|--|------------------|
| 1. Forewings partly green. | <i>muscosa</i> . |
| Forewings without green markings. | <i>amydra</i> . |

29. CASCERA MUSCOSA.

[*Muscosus*, mossy.]

Cascera muscosa, Wlk., Brit. Mus. Cat. xxxii., p. 461.

♀. 54 mm. Head and palpi brown mixed with whitish; vertex ochreous-tinged. Antennæ brown. Thorax brown mixed with pale green, Abdomen brownish-grey. Legs brown mixed with whitish; anterior pair greenish-tinged. Forewings elongate-triangular, costa rather strongly arched, apex rounded, termen obliquely rounded, crenulate, brown mixed with grey, whitish, and green forming very complex markings which are probably variable; costa barred with dark brown and greenish; an irregular green patch near base, and an irregular broad median green band; a whitish spot on costa at $\frac{3}{5}$, and another in dorsal part of disc at $\frac{3}{5}$; beyond median green band is a dark brown band, its outer edge distinct and crenated; beyond this is a subterminal series of green spots edged posteriorly first by whitish, then by dark brown; cilia greenish. Hindwings with termen rounded, wavy; brownish-grey; two or three whitish spots in a line parallel

to inner margin near tornus; cilia whitish with a greenish median line.

Type in British Museum.

Q. Brisbane; one specimen in Coll. Illidge.

Walker gives "Swan River, from Mr. Diggles' Collection," as the origin of this species, but this locality is certainly erroneous.

30. CASCERA AMYDRA, n.sp.

[αμυδρός, dark.]

♂♀. 40-48 mm. Head whitish mixed with brownish-ochreous. Palpi brown. Antennæ brown, pectinations dark fuscous. Thorax dark brownish-grey, collar light brownish-ochreous. Abdomen grey. Legs brown mixed with whitish. Forewings elongate-oblong, costa moderately, in ♀ strongly arched, apex rounded, termen rounded, slightly oblique; brown suffused and irrorated with grey; a transverse dark brown line near base, and another from $\frac{1}{4}$ costa to $\frac{2}{5}$ dorsum; a small brown discal spot above mid-disc, in ♂ this is edged beneath by white, and preceded in disc by a larger white spot, an indistinct posterior line from $\frac{3}{4}$ costa to $\frac{3}{4}$ dorsum; a subterminal row of small circular blackish spots; cilia brownish. Hindwings with termen rounded; grey; cilia grey.

The white markings on forewing of ♂ are probably inconstant and variable.

Type in Coll. Turner.

N.Q. Townsville, in March and April; two specimens received from Mr. Dodd, of which one (♀) is in Coll. Lyell.

SPECIES UNRECOGNISED OR NOT RIGHTLY INCLUDED IN THIS FAMILY.

31. *Clathe arida*, Wlk., Brit. Mus. Cat. v. p. 994, belongs to the *Lasiocampidae*.
32. *Nadiasa parvigutta*, Wlk., *op. cit.*, v. p. 1015, belongs to the genus *Pinara* (*Lasiocampidae*).
33. *Listoca lignaria*, Wlk., *op. cit.*, v. p. 1021, is a synonym of *Clathe arida*, Wlk.

34. *Sorema nubila*, Wlk., } *op. cit.*, v. p. 1065, are also syn-
 35. *Sorema contracta*, Wlk., } onyms of *Clathea arida*, Wlk.
 36. *Ptilomacra senex*, Wlk., *op. cit.*, v. p. 1099, belongs to the
Zeuzeridae.
 37. *Destolmia* (?) *liturata*, Wlk., *op. cit.*, xxxii. p. 409. I have
 not seen the type of this species.
 38. *Rilia distinguenda*, Wlk., *op. cit.*, xxxii. p. 435, is a synonym
 of *Olene mendosa*, Hb., (*Lymantriade*).
 39. *Rigema tacta*, Wlk., *op. cit.*, xxxii. p. 438, is a synonym of
Psalis securis, Hb., (*Lymantriade*).
 40. *Vunga delineata*, Wlk., *op. cit.*, xxxii. p. 453, is a synonym of
Smyriodes aplectaria, Gn. (*Geometridae*).
 41. *Asteroscopus nodosus*, Swin., Cat. Lep. Oxf. Mus. i. p. 299, is
 a synonym of *Chlenias banksiaria*, Le G. (*Geometridae*).
 42. *Lomatosticha nigrostriata*, Möschl., Stett. Ent. Zeit. I have
 not been able to consult this description.
 43. *Teinocladia cuculloidis*, Feld., is a synonym of *Capusa senilis*,
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Fam. HYPONOMEUTIDÆ.

Under this name it is convenient to describe a small group of genera allied to *Hyponomeuta*, Latr., and *Eustixis*, Hb. = *Mieza*, Wlk., = *Enaemia*, Zel. Some of these forms approach in structure to the *Oecophoridae*, from which they may be distinguished *inter alia* by the smooth posterior tibiae. They show, however, much greater variation in the neuration than the latter family. To the *Glyphipterygidae* they are allied, and Mr. Meyrick merges both into the family *Plutellidae*. As I am not at present competent to express any opinion as to whether the *Hyponomeutidae* are to be regarded as a distinct family, I shall not attempt any definition.

The Australian species, of which about twenty are at present known, have hitherto been much confused, although they are all fine and conspicuous insects. In their study I have derived assistance from Walsingham and Durrant's contribution to Swinhoe's 'Catalogue of the Lepidoptera Heterocera in the Oxford Museum' (Vol. ii. p. 558); and I am indebted to Lord Walsingham for permission to describe several species, the types of which are in his Collection. Mr. Lower has kindly lent me for examination the types of two species described by him.

The genus mentioned above, commonly known as *Enaemia*, Zel., which has all the veins separate in both wings, is not at present known to occur in Australia.

TABULATION OF GENERA.

A. Hindwings with vein 4 absent.....	<i>Hyponomeuta</i> .
AA. Hindwings with veins 4 and 5 stalked or connate.	
B. Forewings with veins 7 and 8 stalked.....	<i>Epidictica</i> .
BB. Forewings with veins 7 and 8 separate.....	<i>Lactura</i> .
AAA. Hindwings with veins 4 and 5 separate.	
B. Forewings with veins 2 and 3 stalked.....	<i>Epopsia</i> .
BB. Forewings with veins 2 and 3 separate.	
C. Hindwings with 5 bent and approximated at base to 4.....	<i>Hedycharis</i> .
CC. Hindwings with 5 widely separated at base from 4.....	<i>Attera</i> .

Gen. 1. HYPONOMEUTA, Latr.

[ὑπό, under, νομεύς, a shepherd; probably from the gregarious habits of the larvæ.]

Head smooth. Antennæ in ♂ simple, very minutely ciliated. Tongue well-developed. Maxillary palpi obsolete. Labial palpi moderate, curved, ascending; second joint with appressed scales; terminal joint about as long as second, stout, tolerably acute, with appressed scales slightly roughened in front. Forewings elongate; with twelve veins, all separate, vein 2 from near angle, 3, 4, 5 approximated at base. Hindwings with vein 4 absent, 5 widely separate from 3, 6 and 7 nearly parallel.

A genus of probably nearly world-wide distribution. The larvæ feed gregariously in a common web. Only two Australian species are known.

1. Forewings whitish-grey, spots near termen confluent..... *pustulellus*.
- Forewings white, terminal spots discrete..... *myriosemus*.

1. HYPONOMEUTA PUSTULELLUS.

Hyponomeuta internellus, Wlk., Brit. Mus. Cat. xxviii. p. 533.

Hyponomeuta pustulellus, Wlk., *op. cit.*, xxviii. p. 533.

♂♀. 22-29 mm. Head white. Palpi black, apex of second joint and more or less of terminal joint white. Thorax whitish-

grey, bases of patagia and a pair of median spots black. Abdomen blackish, apices of segments, tuft, and most of under-side white. Legs white annulated with black. Forewings narrow-elongate; whitish-grey with numerous black spots; 6 or 7 spots on basal half of costa; a row of six spots above dorsal margin, the last two touching margin near tornus; a row of eight spots above fold; several spots irregularly distributed between this row and apical half of costa; a number of confluent spots near termen; cilia grey, bases blackish. Hindwings considerably broader than forewings; grey; cilia grey, towards tornus white.

Walker described *internellus* on the same page but before *pustulellus*, indicating, however, that the former might be a variety of the latter; so that I presume the second name should be adopted for the species.

Q. Brisbane, Mt. Tambourine and Warwick; in October and November—N.S.W. Sydney (Walker).

2. HYPONOMEUTA MYRIOSEMUS.

[*μυρίος*, numerous, *σῆμα*, a mark; many-spotted.]

Hyponomeuta myriosema, Turn., Trans. R. Soc. S.A. 1898, p. 200.

Type in Coll. Turner.

Q. Brisbane and Mt. Tambourine; in August and November.

Gen. 2. ATTEVA.

Atteva, Wlk., Brit. Mus. Cat. ii. 526.

Head smooth. Antennæ in male simple. Tongue well developed. Maxillary palpi obsolete. Labial palpi moderate, curved, ascending, smooth-scaled; terminal joint about as long as second, stout, tolerably acute. Forewings elongate; with twelve veins, all separate, vein 2 from considerably before angle. Hindwings with eight veins, all separate, veins 3, 4, and 5 widely separate, 5, 6, and 7 somewhat approximated at base. Hindlegs of ♂ very slender and the tibiæ without spurs.

A genus of wide distribution, being represented in the tropics of both hemispheres. For its synonymy refer to Swinhoe's

'Catalogue of Eastern and Australian Lepidoptera' (Vol. ii. p.558),
Tineina, by Walsingham and Durrant.

Type, *Atteva niveigutta*, Wlk., from India.

- | | |
|---|----------------------|
| 1. Hindwings wholly orange..... | <i>niphocosma</i> . |
| Hindwings with apical half grey..... | 2. |
| 2. Forewings with a dark fuscous terminal band..... | <i>albiguttata</i> . |
| Forewings without a dark fuscous terminal band..... | <i>charopis</i> . |

3. ATTEVA NIPHOCOSMA, n.sp.

[*νίφα*, snow, *κόσμος*, an ornament; adorned with snow-white.]

♀. 25 mm. Head snow-white; a dark fuscous spot on crown. Palpi dark fuscous with some white scales; base of second joint white. Antennæ dark fuscous. Thorax golden-ochreous, with a postmedian snow-white spot; patagia and tegulae snow-white except at base; a pair of white spots on underside. Abdomen golden-ochreous; on underside with a median row of white spots. Legs dark fuscous, femora and posterior tibiae golden-ochreous, banded with white. Forewings elongate, costa arched near apex, apex rounded, hindmargin slightly oblique, slightly rounded; golden-ochreous, with numerous snow-white spots of unequal size; a row of 9 or 10 small spots on or near costa; two on dorsum near base; two on dorsum before tornus, of these the first is larger; five unequally-sized spots in disc not regularly arranged; an erect bar from anal angle to near last costal spot; a spot on termen beneath apex; cilia pale ochreous. Hindwings elongate, as broad as forewings; golden-ochreous of brighter shade than forewings; cilia concolorous.

Type in Coll. Turner.

N.Q. Townsville; one specimen in February, received from Mr. F. P. Dodd—Q. Brisbane; one specimen in March.

A. impariguttella, Zel., is an allied species from Ceylon. *A. fabriciella*, Swed.=*niviguttella*, Wlk., from India and China is very similar but distinct. *A. brucea*, Moore, from Java is another closely allied species. *A. emissella*, Wlk., from Borneo, is similar but has grey hindwings. *A. niveigutta*, Wlk., from Assam, has been naturally confounded with *niviguttella*, but is

a very different species. I am indebted to Mr. Durrant for this note.

4. ATTEVA ALBIGUTTATA.

[Albus, white, gutta, a drop; with white spots].

Zeller (*teste* Durrant). I have not seen the reference.

Head and face golden-ochreous with white margins. Palpi blackish, bases and apices of joints white. Thorax golden-ochreous, with paired white dots on apices of tegulæ, bases of patagia, and posteriorly. Abdomen golden-ochreous; on under-side a median row of white dots. Legs blackish annulated with white. Forewings elongate; golden-ochreous with numerous snow-white spots; ten small spots on costa; ten or eleven in a line beneath costa; five on dorsal margin; and about a dozen of unequal size between dorsum and the preceding row; an erect white bar, sometimes interrupted, from tornus narrowing to costa near apex; beyond this disc is dark fuscous; three minute dots near apex; cilia white. Hindwings dark grey; basal fourth golden-ochreous; cilia grey, on tornus and inner margin golden-ochreous.

Q. Brisbane, in April.

6. ATTEVA CHAROPIS, n.sp.

[χαροπῖς, bright, joyous.]

♂♀. 26 mm. Head white; posterior edge and a line between antennæ dark fuscous. Palpi white; a band on second joint and on terminal joint towards apex dark fuscous. Antennæ dark fuscous. Thorax golden-ochreous; a double post-median spot and apices of tegulæ snow-white; three pairs of white spots on underside. Abdomen golden-ochreous. Legs dark fuscous banded with white; posterior pair in ♂ whitish-ochreous. Forewings elongate, costa arched near apex, apex rounded. Hindmargin slightly oblique, slightly rounded; golden-ochreous with numerous snow-white spots of unequal; size a minute basal spot; seven to ten small spots on costa, the two penultimate rather larger; a large spot above dorsum near base, and another

on dorsum beyond this; three spots on dorsum before tornus, the middle one sometimes connected with a discal spot; four rather large discal spots in longitudinal series; an erect bar from tornus towards last costal spot, sometimes divided into two spots; cilia fuscous, apices paler. Hindwings bright golden-ochreous; apical half dark fuscous; cilia dark fuscous on apical half of termen, thence bright golden-ochreous.

A series including the type in Coll. Walsingham.

N.Q. Cedar Bay, near Cooktown (Meek).

This species resembles though it does not accurately correspond with *A. pulchella*, Moore, a species of doubtful locality. An examination of the type is necessary to establish or contradict its identity.

Gen. 3. EPIDICTICA, gen. nov.

[ἐπιδεικτικός, fit for display, ostentatious.]

Epidictica, Wlsm., MS.

Head smooth. Antennæ of male slightly serrate, very minutely ciliated. Tongue well developed. Maxillary palpi minute. Labial palpi rather short, porrect, with appressed scales; terminal joint as long as second, rather stout, tolerably pointed. Forewings elongate-ovate; vein 2 from near angle, 7 and 8 stalked. Hindwings with veins 4 and 5 stalked or rarely connate, 6 and 7 tolerably parallel.

Type, *E. calliphylla*, Turn.

- | | |
|---|----------------------|
| 1. Head white..... | <i>cristata</i> . |
| Head orange or reddish..... | 2. |
| 2. Hindwings reddish..... | 3. |
| Hindwings with apical half dark purplish..... | <i>pilcheri</i> . |
| 3. Forewings yellowish with numerous red lines..... | <i>calliphylla</i> . |
| Forewings purple-reddish with yellow spots..... | <i>thiospila</i> . |

7. EPIDICTICA CALLIPHYLLA, n.sp.

[καλλίφυλλος, with beautiful wings.]

♂♀. 20-24 mm. Head red, sides of crown and lower half of face pale yellow. Palpi and antennæ red. Thorax pale yellow;

two lateral spots and base of collar, a bar across tegulæ, and a broad cruciform mark, red. Abdomen reddish. Legs pale yellowish partly suffused with reddish; anterior pair red, basal half of tibiae and first tarsal joint pale yellow on external surface. Forewings elongate-oval, costa rather strongly arched, apex rounded, termen obliquely rounded; pale yellow with red lines on veins and on basal portions of costa and inner margin; several longitudinal red lines in disc; an inwardly oblique line of slightly darker colour across basal portion of cell; a similar short inwardly oblique line from end of cell to dorsum; a short outwardly oblique line before apex commencing from vein 9, crossing 7 and 8 at their bifurcation, bent inwards at vein 6 to end on vein 5; cilia red, apices yellowish. Hindwings with termen slightly excavated before tornus; reddish; cilia reddish, in excavation whitish.

This species has been mistaken for *Lactura mactata*, Feld., but the venation should be a sufficient distinction. The oblique line crossing the distal veins is characteristic.

Var. *tenuilinea*.

[Tenuis, slender, linea, a line; with slender lines.]

Differs from the type as follows:—All red markings except cruciform mark on thorax, and oblique lines on forewings much reduced or absent.

Though very different in superficial appearance the markings where traceable agree accurately with type. Both forms were taken together, and I have no doubt they represent the same species.

Type in Coll. Turner.

Q. Brisbane and Mt. Tambourine; a series taken in November.

8. EPIDICTICA CRISTATA.

Cyptasia cristata, Butl., Trans. Ent. Soc. 1886, p. 383.

Enaemia callianthes, Low., Trans. R. Soc. S.A. 1894, p. 111.

Enaemia micoleuca, Turn., Trans. R. Soc. S.A. 1900, p. 14.

Type in British Museum.

N.Q. Mackay (Lower)—Q. Gympie.

9. EPIDICTICA THIOSPILA, n.sp.

[*θειον*, sulphur; *σπίλος*, a spot; with pale yellow spots.]

♂. 27 mm. Head orange; face and palpi yellowish. Antennæ yellowish; towards base orange. Thorax dull purple-reddish; collar and apex of tegulæ pale yellow. Abdomen reddish. Legs reddish. Forewings elongate-oval, costa rather strongly arched, apex rounded, termen obliquely rounded; dull purple-reddish; edge of dorsum, of basal third of costa, and of apical fourth of costa, orange; spots pale yellow; a large triangular spot on costa near base; a smaller spot opposite this on dorsum; a second costal spot at $\frac{3}{4}$; several small indistinct spots in posterior part of disc; a narrow pale yellow terminal band, its anterior edge indented above middle; cilia pale yellow. Hindwings and cilia reddish; veins 4 and 5 connate.

Type in Coll. Walsingham.

N.Q. Mackay; one specimen (Meek).

10. EPIDICTICA PILCHERI.

Calligenia pilcheri, Luc., Proc. Linn. Soc. N.S.W. 1891, p. 279.

♀. 20-22 mm. Head reddish-orange. Palpi reddish-orange. Antennæ blackish, near base reddish-orange. Thorax purple-reddish; two spots on tegulæ and a large posterior spot reddish-orange; apices of patagia and a pair of lateral spots pale yellowish. Abdomen reddish-orange. Legs blackish irrorated with reddish-orange and whitish. Forewings elongate-oval, costa rather strongly arched, apex rounded, termen obliquely rounded; purple-reddish; spots pale yellowish; those on costa and dorsum partly suffused with reddish-orange; a large squarish spot on costa at $\frac{1}{4}$; a smaller spot on costa at $\frac{3}{4}$; an elongate subtriangular spot on mid-dorsum, preceded and followed by a small spot in disc; a small spot before tornus, two terminal spots, and two or three dots in posterior portion of disc; cilia reddish-orange, at tornus interrupted by purple-reddish. Hindwings purple-reddish; basal $\frac{1}{4}$ and costa reddish-orange; cilia purple-reddish, on tornus and inner margin reddish-orange.

Type in Coll. Lucas.

Q. Rockhampton (Lucas), Bundaberg, and Brisbane; in November and March.

No doubt this species is somewhat variable; I have not seen the male.

Gen. 4. LACTURA.

Lactura, Wlk., Brit. Mus. Cat. ii. 485.

Head smooth. Antennæ in male slightly serrate, very minutely ciliated. Tongue well developed. Maxillary palpi minute. Labial palpi rather short, porrect, with appressed scales; terminal joint as long or rather shorter than second, rather stout, tolerably pointed. Forewings elongate-ovate; with 12 veins all separate, 2 from near angle. Hindwings with veins 4 and 5 stalked or rarely connate, 6 and 7 tolerably parallel.

Type, *L. dives*, Wlk.

This genus includes and supersedes *Dianasa*, Wlk., *Themiscyra*, Wlk., and *Cyptasia*, Wlk.

- | | |
|--|----------------------|
| 1. Forewings with numerous red lines parallel to veins..... | 2. |
| Forewings with veins not outlined with red..... | 6. |
| 2. Forewings marked with grey..... | 3. |
| Forewings without grey markings..... | 4. |
| 3. Forewings with a large apical grey blotch..... | <i>egregiella</i> . |
| Forewings with apex yellowish..... | <i>laetifera</i> . |
| 4. Forewings with oblique purplish lines..... | 5. |
| Forewings without purple lines..... | <i>erythractis</i> . |
| 5. Purplish lines suffused and connected in disc..... | <i>eupoecila</i> . |
| Purplish lines narrow, separate.... | <i>mactata</i> . |
| 6. Forewings with yellow or white blotches on apex and tornus..... | <i>suffusa</i> . |
| Forewings without blotches on apex and tornus..... | 7. |
| 7. Forewings reddish..... | <i>caminaca</i> . |
| Forewings fuscous..... | <i>dives</i> . |

11. LACTURA EGREGIELLA.

[*Egregius*, distinguished.]

Cyptasia egregiella, Wlk., Brit. Mus. Cat. xxxv. p. 1837.

Q. 22 mm. Head and thorax whitish with reddish markings. Palpi, antennæ and abdomen reddish. Forewings elongate-ovate

costa moderately arched, apex rounded, termen obliquely rounded; whitish with reddish lines on veins; a large triangular grey blotch, its apex at mid-costa, its base along nearly the whole of dorsum, containing several whitish spots near dorsum; a large apical grey blotch; cilia whitish. Hindwings and cilia reddish.

My only example is in poor condition, but the above description should be sufficient for recognition.

Type in British Museum.

N.Q.—Q. Wide Bay (Olliff).

Walker gives "Swan River, from Mr. Diggles' Collection," but this is certainly an error. Probably Diggles' specimen was taken near Moreton Bay, Queensland.

12. LACTURA LAETIFERA.

[Laetifer, joyful, pleasing.]

Themiscyra laetifera, Wlk., Brit. Mus. Cat. xxxi. p. 258.

Enaemia pyrochrysa, Low., Trans. R. Soc. S.A. 1894, p. 111.

♂♀. 30-32 mm. Head pale yellow, upper margin of face and middle of crown reddish-orange. Palpi pale yellow. Antennæ reddish-orange. Thorax pale yellow with a central grey stripe bifurcating posteriorly; bases of tegulæ, a spot behind tegulæ, and centres of patagia reddish-orange. Abdomen reddish-orange, beneath pale yellow. Legs pale yellowish; anterior pair reddish-orange; femora tinged with reddish-orange. Forewings elongate-ovate, costa strongly arched, apex rounded, termen rounded, slightly oblique; pale yellow, veins outlined with reddish-orange; with two grey fasciæ interrupting streaks on veins; first fascia from mid-costa to near base of dorsum; second fascia confluent with first on costa, outwardly curved, narrowing in disc, to dorsum at $\frac{2}{3}$, connected by a dorsal streak with first fascia; from it are given off a broad central streak to termen, a short oblique streak to tornus, and a fine streak along dorsum to tornus; cilia pale yellow. Hindwings and cilia reddish-orange.

Type in British Museum.

N.Q. Cairns (Lower)—Q. Bundaberg, Brisbane.

13. LACTURA ERYTHRACTIS.

[ἐρυθράς, red.]

Enaemia erythractis, Meyr., Trans. R. Soc. S.A. 1886, p. 1043.

♂♀. 26-32 mm. Head reddish; sides of crown and face pale yellow. Palpi and antennæ reddish. Thorax pale yellow; an anterior cruciform mark and a posterior spot red; posterior extremity pale yellow; collar narrowly red at base; tegulæ red, apex and a spot near base pale yellow. Abdomen reddish. Legs reddish; internal surfaces yellowish. Forewings elongate-oval, costa rather strongly arched, apex rounded, termen obliquely rounded; pale yellow with red lines; a narrow line along costa to $\frac{3}{5}$; another along inner margin to $\frac{4}{5}$, basal portion broad, median portion sometimes obsolete; a short streak along basal part of vein 12; a streak along vein 11 to costa; cell broadly outlined, incompletely so along submedian, crossed towards base by an oblique line which is prolonged to dorsum at $\frac{1}{4}$; beyond this it is divided by a median line, each division containing a short longitudinal streak; a strong line from end of cell to dorsum at $\frac{4}{5}$; veins 2 to 10 outlined; cilia red, apices pale yellowish. Hindwings and cilia reddish.

Type in Macleay Museum.

N.Q. Townsville, in January, a series received from Mr. F. P. Dodd; Bowen (Meyrick).

Distinguished by its large size and absence of oblique dark lines.

14. LACTURA EUPOECILA, n.sp.

[εὐποίκιλος, variegated.]

♂♀. 23-26 mm. Head red; sides of crown and face pale yellowish. Palpi red, terminal joint pale yellowish. Antennæ reddish. Thorax pale yellow; base of collar, two lateral spots on collar, margins of patagia, and an anterior cruciform mark red; a posterior dot purple-grey; posterior extremity pale yellow. Abdomen red, lower surface, and in ♂ also apex, pale yellow.

Legs pale yellowish suffused with reddish; anterior pair reddish, basal half of tibiae and first joint of tarsus pale yellow on external surface. Forewings elongate-ovate, costa rather strongly arched, apex rounded, termen obliquely rounded; pale yellow with red lines along veins; two strong oblique purple-grey lines; first from costa at $\frac{2}{3}$ to inner margin near base, narrowly interrupted near costa; second from beneath costa near apex to inner margin at $\frac{3}{4}$, dilated on inner margin and connected with first fascia in disc, its costal half being represented by short streaks on veins; in addition to red lines on veins there are a bisecting line and several other lines in cell, and a line along inner margin, and at base of costa; cilia red, apices pale yellowish. Hindwings and cilia pale reddish; in ♀ deep reddish; veins 3 and 4 short-stalked in ♂, closely approximated in ♀.

A series including the type in Coll. Walsingham.

N.Q. Cedar Bay, near Cooktown (Meek).

There appears to be a constant sexual difference in the colouration of the hindwings and abdomen.

15. LACTURA MACTATA.

[Mactatus, honoured.]

Mieza mactata, F. and R., Reise Nov. pl. cxxxix. fig. 44.

♂♀. 19-20 mm. Head pale yellow, centre of crown reddish; face whitish. Palpi whitish; external surface of second joint reddish. Antennæ red. Thorax pale yellow, margins of tegulae and patagia and a broad central stripe not reaching posterior extremity red. Abdomen reddish, beneath whitish. Legs pale yellow tinged with reddish; anterior pair mostly red. Forewings elongate-ovate, costa rather strongly arched, apex rounded, termen obliquely rounded, pale yellow with red streaks along veins, and additional longitudinal red streaks in disc; two narrow oblique purple-grey fasciae; first from dorsum at $\frac{1}{6}$ towards but scarcely reaching costa at $\frac{1}{3}$; second from dorsum at $\frac{3}{4}$ nearly to apex, interrupted in disc, with two narrow processes anteriorly,

one on and the other near dorsum, but not reaching first fascia; a narrow red terminal line; cilia pale yellow, bases red. Hindwings and cilia reddish.

N.Q. Cape York (Felder), Kuranda, Geraldton (Johnstone River); in October and November.

Smaller and narrower-winged than the preceding, the fasciæ narrower, not connected, the second fasciæ without processes to termen. Felder's figure is coarse and inaccurate, but may fairly be assumed to represent this species.

16. *LACTURA SUFFUSA*.

Dianasa suffusa, Wlk., Brit. Mus. Cat. ii. p. 488.

Dianasa (?) *obscura*, Butl., Trans. Ent. Soc. 1877, p. 346.

Hypoprepia haematopus, F. & R., Reise Nov. pl. 139, f. 54, 55.

♂♀. 40-46 mm. Head yellow, in ♀ white. Palpi yellow, in ♀ white, apices fuscous. Antennæ dark fuscous; basal joint yellow, in ♀ white. Thorax red, anterior margin broadly yellow in ♂, white in ♀; patagia except bases in ♂ grey. Abdomen red, beneath ochreous-whitish, sides in ♂ grey. Legs dark fuscous; femora red. Forewings elongate-ovate, costa rather strongly arched, apex rounded, termen slightly rounded, oblique; grey, in ♀ sometimes pale red; a red streak along fold, and another midway between fold and costa, commencing at $\frac{1}{4}$; a broad yellow stripe along costa to $\frac{1}{3}$, terminating abruptly, in ♀ white; costal edge red; a dark red dot in costal stripe near base, and a second elongate spot on lower edge near middle; two red dots above dorsum at $\frac{1}{4}$ and $\frac{1}{2}$; a triangular blotch at apex and another at tornus, margined in disc by red, yellow in ♂, white in ♀; cilia yellowish, in ♀ whitish. Hindwings and cilia red, in ♂ termen and cilia sometimes suffused with dark grey.

Var. *obscura*, Butl.—♂. Forewings exactly as in type, but ground colour darker. Hindwings and cilia blackish-fuscous. Abdomen above blackish-fuscous, irrorated with red near base.

Q. Brisbane. Felder's locality, Assam, is probably erroneous.

17. LACTURA CAMINAEA.

[κάμινος, a furnace; fiery red.]

Enaemia caminaea, Meyr., Proc. Linn. Soc. N.S.W. 1886, p. 1044.

Type in Australian Museum.

N.S.W. Newcastle (Meyrick).

18. LACTURA DIVES.

Lactura dives, Wlk., Brit. Mus. Cat. ii, p. 485.

♂♀. 28-32 mm. Head reddish; face pale yellow. Palpi and antennæ black. Thorax blackish; with a large posterior pale yellow spot. Abdomen black; sides red; tuft yellowish. Legs black. Forewings elongate-oval, costa moderately arched, apex rounded, hindmargin obliquely rounded; purple-blackish, with seven rather large roundish pale yellow spots; a spot at base; a second beneath costa at $\frac{1}{3}$; third above dorsum at $\frac{2}{5}$; fourth in disc beyond middle; fifth beneath and internal to fourth; sixth small just above inner margin before tornus; seventh small, somewhat suffused, partly bisected by a dark line on vein in disc at $\frac{5}{6}$; cilia dark fuscous, apical $\frac{2}{3}$ from before apex to middle of termen pale yellow. Hindwings fuscous; basal portion, except near inner margin, reddish; cilia fuscous, with a darker basal line.

Type in British Museum.

N.Q. Townsville, in March; a series bred by Mr. F. P. Dodd.

Gen. 5. EPOPSIA, gen. nov.

[ἐπόψιος, conspicuous.]

Head loosely scaled. Tongue present. Palpi short, recurved, smooth-scaled; second joint short; terminal joint $\frac{2}{3}$ second, rather short, tolerably acute, apex just reaching base of antennæ. Antennæ in male simple, with short even ciliations ($\frac{2}{3}$). Thorax smooth. Posterior tibiæ smooth-scaled. Forewings with veins 2 and 3 on a long stalk from angle, 7 and 8 separate, 7 to termen.

Hindwings with disco-cellular sharply angled, 3 and 4 from a point, 5 from middle of cell, 6 and 7 short-stalked.

Very distinct in the stalking of veins 2 and 3 of forewings, and 6 and 7 of hindwings.

19. *EOPSIS METRETA*, n.sp.

[μετρητός, measured.]

♂. 20 mm. Head yellow, back of crown red. Palpi red, terminal joint mixed with pale yellow. Antennæ red, towards apex whitish. Thorax red; a central spot and basal $\frac{3}{4}$ of tegulae bright yellow. Abdomen reddish. Legs reddish; middle tibiae and tarsi, and posterior tarsi yellowish. Forewings elongate-oblong, costa moderately arched, apex round-pointed, termen obliquely rounded; dull red; markings bright yellow, an inwardly oblique fascia from costa before middle to dorsum at $\frac{1}{3}$; a triangular spot on dorsum before tornus; apical part of termen narrowly pale yellow; cilia red, towards apex pale yellow. Hindwings and cilia red.

Type in Coll. Walsingham.

N.Q. Cedar Bay near Cooktown (Meek).

Gen. 6. *HEDYCHARIS*, gen.nov.

[ἡδυχαρής, sweetly joyous.]

Head smooth. Tongue present. Palpi short, recurved, with appressed scales; terminal joint shorter than second, pointed. Antennæ of male simple, very minutely ciliated. Forewings elongate-ovate; with twelve veins, 7 and 8 stalked. Hindwings with eight veins, all separate, 5 approximated to 4 at base, 6 and 7 tolerably parallel.

20. *HEDYCHARIS PHOENOBAPTA*, n.sp.

[φαινός, dark red; βαπτός, dyed.]

♂. 16 mm. Head and palpi orange-reddish. Antennæ blackish. Thorax purplish-red; with a pair of postmedian lateral whitish spots. Abdomen purplish-red; some basal hairs, lower and lateral

surfaces orange. Legs whitish mixed with dark fuscous. Forewings elongate-oval, costa rather strongly arched, apex rounded, hindmargin obliquely rounded; purplish-red, markings whitish; a longitudinal line in disc at $\frac{1}{3}$; three small spots in a line above dorsum; a spot close to dorsum before tornus; a dot at end of cell; a broadish line along termen, dilated at extremities, not reaching tornus; cilia purplish-red. Hindwings thinly scaled; purplish-red; some orange hairs near inner margin; cilia purplish-red.

Type in Coll. Turner.

Q. Brisbane; one specimen in March.

SPECIES UNRECOGNISED OR BELONGING TO OTHER FAMILIES.

21. *Mieza* (?) *picta*, F. and R., Reise Nov. pl. 138, f. 49. "Australia, Cape York."
22. *Mieza* (?) *erythroceræ*, F. and R., *op. cit.*, pl. 138, f. 53. "Australia, Cape York."
23. *Mieza* (?) *phonodes*, F. and R., *op. cit.*, pl. 139, f. 37. "Australia, Cape York." These three species are unknown to me.
24. *Polynesa maculosa*, Turn., Trans. R. Soc. S.A. 1898, p. 201. I am inclined to refer this genus to the *Gelechiidae*. The posterior tibiæ are hairy, not smooth-scaled as stated.
25. *Callithauma basilica*, Turn., *op. cit.*, 1900, p. 15. I now refer this genus to the *Ecophoridae*.
26. *Ceratophysetis sphaerosticha*, Meyr., Proc. Linn. Soc. N.S.W. 1886, p. 1045. This genus should, I think, be referred to the *Ecophoridae* in the neighbourhood of *Psecadia*. The posterior tibiæ are certainly hairy.
27. *Thyridectis psephonoma*, Meyr., *op. cit.*, 1886, p. 1046. I do not know this species.

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